

## Abstract

## Method for purifying caprolactam

- 5 A process for purifying crude caprolactam which has been obtained by
- 1) converting a mixture (I) comprising 6-aminocapronitrile and water to a mixture (II) comprising caprolactam, ammonia, water, high boilers and low boilers in the presence of a catalyst, then
  - 10 2) removing ammonia from mixture (II) to obtain a mixture (III) comprising caprolactam, water, high boilers and low boilers, then
  - 3) completely or partly removing water from mixture (III) to obtain crude caprolactam (IV) comprising caprolactam, high boilers and low boilers,
  - 15 which comprises
  - a) feeding the crude caprolactam and an inorganic acid which has a boiling point above the boiling point of caprolactam under the distillation conditions of the following steps b) to h) to a first distillation apparatus C1,
  - 20 b) distilling the crude caprolactam and the inorganic acid in the first distillation apparatus C1, and removing a first substream in the bottom region and a second substream in the top region of the distillation apparatus C1,
  - 25 c) feeding the second substream from step b) to a second distillation apparatus C2,
  - d) distilling the second substream from step b) in the second distillation apparatus C2, and removing a first substream in the bottom region and a second substream in the top region of the distillation apparatus C2,
  - e) feeding the first substream from step d) to a third distillation apparatus C3,
  - 30 f) distilling the first substream from d) in the third distillation apparatus C3, and removing a first substream in the bottom region and purified caprolactam in the top region of distillation apparatus C3, and
  - g) feeding the first substream from step f) to the first distillation apparatus C1.